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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,513	02/28/2002	Noriyuki Hirayanagi	4641-62034	2149

7590 08/26/2003

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EXAMINER

KIM, PETER B

ART UNIT PAPER NUMBER

2851

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/086,513		HIRAYANAGI, NORIYUKI	
	Examiner		Art Unit	
	Peter B. Kim		2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: On page 15, line 10, instead of "43," "45" seems more appropriate.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 8, 20, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Saiki et al. (Saiki) (6,509,953).

Saiki discloses in Fig. 4A, a method for performing a microlithography with a reticle (120) and a reticle chuck (104) to be positioned between an upstream illumination optical system (111), and a downstream projection-optical system (109) of microlithography apparatus, the reticle chuck comprising a downstream-facing reticle-mounting surface and being configured to hold the reticle on the reticle mounting surface.

Claims 1, 8, 20 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyazaki et al. (Miyazaki) (5,777,722).

Art Unit: 2851

Miyazaki discloses in Fig. 3, a method for performing a microlithography with a reticle (103) and a reticle chuck (103A) to be positioned between an upstream illumination optical system (106B), and a downstream projection-optical system (102) of microlithography apparatus, the reticle chuck comprising a downstream-facing reticle-mounting surface and being configured to hold the reticle on the reticle mounting surface.

Claims 1-3, 8-10, 15, 16, 18-24, 31, and 34-36 rejected under 35 U.S.C. 102(b) as being anticipated by Knirck et al. (Knirck) (5,883,703).

Knirck discloses in Fig. 4-6, a method for performing a microlithography with a reticle (406, 606) and a reticle chuck (408, 608) to be positioned between an upstream illumination optical system configured to pass a beam of electromagnetic radiation, and a downstream projection-optical system (402, 602) of microlithography apparatus, the reticle chuck comprising a downstream-facing reticle-mounting surface and being configured to hold the reticle on the reticle mounting surface. Knirck discloses at least one electrostatic electrode configured to attract and hold the reticle (col. 6, lines 13-46), and at least one vacuum orifice connected to vacuum source to hold the reticle (col. 5, lines 14-48). Knirck discloses reticle substrate from glass or silicon (col. 6, lines 5-12), and a divided reticle (Fig. 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2851

Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knirck et al. (Knirck).

Knirck discloses the claimed invention as discussed above. Although Knirck does not disclose inscribing a pattern on a reticle blank, Knirck discloses a reticle and chuck and the method of performing microlithography using the reticle. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the chuck of Knirck to mount the reticle blank on the chuck for inscribing a pattern because reduce sag that occurs in the reticle as taught by Knirck in col. 2, lines 1-12.

Claims 4, 14, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knirck et al. (Knirck) in view of Novak (2002/0043163).

Knirck discloses the claimed invention as discussed above; however, Knirck does not disclose a catching member to hold the reticle when the reticle has been unintentionally released. Novak discloses using clamps to hold the reticle because the electrostatic means and vacuum means are not as reliable (para 0005, 0006). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the clamps or catching member of Novak in addition to the electrostatic means and vacuum means of Knirck because it is well known that the electrostatic and vacuum means are not always reliable.

Claims 5-7, 11-13, 17, 26-28, 30, and 37 rejected under 35 U.S.C. 103(a) as being unpatentable over Knirck et al. (Knirck) in view of Hirayanagi (5,847,813).

Knirck discloses the claimed invention as discussed above; however, Knirck does not disclose reticle chuck comprising a peripheral portion and at least one strut portion extending across an open region between opposing member of peripheral portion and electrostatic electrode

Art Unit: 2851

or vacuum orifice associated with the strut portion and the use of a charged particle beam.

Hirayanagi discloses in Fig. 1, 2, 4, 5, and 7, a reticle (10) and reticle chuck (20) with a peripheral portion and struct portion with the electrostatic electrode (Fig. 2) and vacuum orifice (Fig. 7). Hirayanagi also discloses using a charged particle beam (col. 2, lines 30-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the struct and the charged particle beam to the invention of Knirck in order to prevent sagging distortion and to provide another illumination source as taught by Hirayanagi in col. 1, lines 45-56.

Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knirck et al. (Knirck) in view of Ota (2002/0017616).

Knirck discloses the claimed invention as discussed above; however, Knirck does not disclose a reticle-height-measurement device configured to direct a laser beam at grazing incidence on the downstream facing surface of the reticle. Ota discloses a reticle-height-measurement device (13) configured to direct a laser beam at grazing incidence on the downstream facing surface of the reticle (34). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the height measurement device of Ota to Knirck in order to obtain position information for best focusing as taught by Ota in para. 0035.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Kim whose telephone number is (703) 305-0105. The examiner can normally be reached on Monday-Thursday from 8:30 AM to 6:00 PM. The examiner can also be reached on alternate Fridays during the same hours.

Art Unit: 2851

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703 308 2847. The fax phone numbers for the organization where this application or proceeding is assigned is 703 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 306- 3431.

A handwritten signature in black ink, appearing to read 'P.B. Kim', with a long horizontal flourish extending to the right.

Peter B. Kim
Patent Examiner
August 18, 2003